

# Pumps and Compressors

## 1998

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*(Formerly Series No. MA35P)*

Information about the scope of the survey, methodology, explanation of terms and historical notes for this survey may be found in the introduction of the 1997 Manufacturing Profiles, issued August 1999.

Current data are released electronically on Internet for all individual surveys as they become available. Use: <http://www.census.gov/econ/www/manumenu.html>. Individual reports can be accessed by choosing "Current Industrial Reports (CIR's)," clicking on "Report Number Index;" from the "Industrial Products by Numeric Index," choose the survey of interest. Follow the menu to view the PDF file or to download the worksheet file (WK format) to your personal computer.

These data are also available through the U.S. Department of Commerce and STAT-USA Electronic Bulletin Board by subscription. To access, dial 202-482-3870 and follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information. The Internet address is: [www.stat-usa.gov/](http://www.stat-usa.gov/).

NOTE: Data are now published on the new North American Industry Classification System (NAICS) basis and therefore are not always comparable to the old Standard Industrial Classification (SIC) code. For further information on NAICS, see [www.census.gov/epcd/www/naics.html](http://www.census.gov/epcd/www/naics.html).

### Summary of Findings

In 1998, manufacturers' shipments of pumps and compressors totaled \$9,122 million, an increase of 3 percent from the 1997 figure of \$8,879 million. The 1998 total includes industrial pumps, \$2,924 million, an increase of 7 percent from the 1997 total of \$2,732 million; compressors and vacuum pumps, \$3,089 million, a decrease of 6 percent from the 1997 total of \$3,273 million; domestic water systems, \$409 million, an increase of 14 percent from the 1997 total of \$357 million; domestic sump pumps, \$146 million, a decrease of 10 percent from the 1997 total of \$161 million; oil well and oil field pumps, \$362 million, an increase of 9 percent over the 1997 total of \$333 million.

Since 1995, replacement parts, sold separately, for pumps and compressors, are included in the survey total, although companies which manufacture only parts and not complete units are presently excluded from the survey. For 1998, in-scope shipments of parts for pumps totaled \$1,097 million, an increase of 9 percent from the 1997 total of \$1,003 million, and in-scope shipments of compressor and vacuum pumps parts totaled \$333 million, a decrease of 8 percent from the 1997 total of \$361 million.

Current  
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Address inquiries concerning these data to Investment Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Keeley Voor, 301-457-4746.

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# U S C E N S U S B U R E A U

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Economics and Statistics Administration  
U.S. Census Bureau



Table 1. Summary of Quantity and Value of Shipments of Pumps and Compressors: 1998 and 1997  
[Quantity in number of units. Value in thousands of dollars]

Product description	1998		1997	
	Quantity	Value	Quantity	Value
Total .....	26,396,312	9,121,946	24,498,030	8,878,621
Pumps (except vacuum pumps), including parts.....	22,643,560	5,192,092	20,995,595	4,889,707
Industrial pumps.....	11,931,808	2,924,318	9,771,390	2,731,723
Drivers, reported.....	(X)	507,833	(X)	354,310
Centrifugal pumps (except drivers).....	7,132,943	1,717,090	5,236,979	1,563,175
Submersible, reported.....	703,204	252,851	717,029	262,454
Other, reported.....	6,080,074	1,422,212	4,196,772	1,261,859
Estimated from pre-1995-basis reports.....	349,665	42,027	323,178	38,862
Vertical turbine pumps (except drivers).....	54,905	209,719	59,004	223,049
Reported.....	54,537	207,264	58,613	220,438
Estimated from pre-1995-basis reports.....	368	2,455	391	2,611
Reciprocating pumps (except drivers), reported.....	(D)	(D)	(D)	(D)
Diaphragm pumps (except drivers), reported.....	1,877,154	222,730	1,691,417	217,310
Rotary pumps (except drivers), reported.....	(D)	(D)	(D)	(D)
Other (except drivers), reported.....	1,083,483	146,745	1,081,144	140,663
Estimated from other sources (potentially including drivers).....	70,101	23,367	(D)	(D)
Domestic water systems, including drivers.....	2,337,603	408,882	2,063,189	357,162
Reported.....	2,332,983	408,112	2,055,842	356,489
Estimated from other sources.....	4,620	770	(S)	673
Domestic sump pumps, including drivers.....	2,601,680	145,784	2,741,110	161,202
Reported.....	2,594,629	145,389	2,741,110	160,763
Estimated from other sources.....	7,051	395	(S)	439
Oil well and oil field pumps.....	58,443	362,068	59,369	332,669
Drivers, reported.....	(X)	110,681	(X)	115,822
Except drivers, reported.....	57,922	248,132	59,369	213,861
Reported.....	5,691,932	252,617	6,334,935	303,155
Estimated from other sources.....	22,094	1,048	(S)	1,258
Parts (reported; made by manufacturers of complete pumps).....	(X)	1,097,375	(X)	1,002,538
Compressors, including vacuum pumps and parts.....	3,752,752	3,088,715	3,502,435	3,273,282
Air and gas compressors (but not vacuum pumps).....	3,395,226	2,522,060	3,182,025	2,634,859
Drivers (except for one category of gas compressor), reported.....	(X)	252,885	(X)	277,656
Air compressors (except drivers), new, stationary, reported.....	763,702	934,212	918,876	1,068,800
Air compressors (except drivers), new, portable, reported.....	2,515,560	631,392	2,201,181	584,611
Gas compressors (usually except drivers), new, stationary, reported.....	3,753	801,070	4,160	803,052
Other compressors (except drivers), reported.....	49,593	108,656	57,808	129,719
Laboratory vacuum pumps (potentially including drivers; reported).....	(D)	(D)	(D)	(D)
Vacuum pumps (except laboratory).....	343,484	229,704	305,943	273,567
Drivers, reported.....	(X)	22,163	(X)	30,162
Except drivers, reported.....	322,999	193,884	305,943	227,087
Estimated from other sources (potentially including drivers).....	20,485	13,657	(D)	16,318
Parts (reported; made by manufacturers of complete compressors).....	(X)	333,306	(X)	361,322

D Withheld to avoid disclosing data for individual companies. S Does not meet publication standards.  
X Not applicable.

Table 2. Quantity and Value of Shipments of Selected Construction Machinery: 1998 and 1997  
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1998		1997	
			Quantity	Value	Quantity	Value
3339111 pt.	Pumps and compressors 1/.....	(X)	26,396,312	9,121,946	24,498,030 r/	8,878,621
	Industrial pumps (except hydraulic fluid power pumps).....	(X)	11,931,808	2,924,318	9,771,390 r/	2,731,723
3339111401	Value of drivers 2/.....	98	(X) a/	507,833	(X)	354,310
	Centrifugal pumps:					
	Sewage type (nonsubmersible) vertical or horizontal with nonclog impeller .....	(X)	10,703	35,867	12,481	46,386
3339111411	12" and under.....	18	10,577 a/	33,685	12,192	40,246
3339111412	Over 12".....	5 c/	126 b/	2,182	289	6,140
	Submersible effluent pumps (less than 1" solids handling capacity) .....	(X)	288,707	55,082 r/	327,185	54,382
3339111424	Less than 1 hp.....	16	273,349	30,854 r/	312,930 r/	34,892
3339111425	1 hp and over.....	14	15,358 c/	24,228 r/	14,255	19,490
	Submersible solids handling pumps (solids 1" to 2" inclusive).....	(X)	330,591	73,598 r/	297,933 r/	70,214
3339111428	1/2 hp and under.....	14	283,599	46,413 r/	250,729 r/	44,403
3339111429	Over 1/2 hp.....	20	46,992	27,185	47,204	25,811
	Submersible nonclog pumps (greater than 2" solids handling capacity).....	(X)	42,185	77,391	44,407	87,227
333911142C	3" discharge and under.....	13	22,851	15,289	19,998	15,305
333911142E	Discharge more than 3" but less than 7".....	19	18,439	53,346	23,367	65,704
333911142G	7" discharge and over .....	7	895	8,756	1,042	6,218
	Submersible grinder pumps (incorporating a hardened stainless steel cutter mechanism to macerate the solids into a fine slurry).....	(X)	41,721	46,780	47,504	50,631
333911142K	2 hp and below.....	9	34,560	36,087	38,228	36,905
333911142M	Over 2 hp.....	5	7,161	10,693	9,276	13,726
	Single and two stage, single and end suction, close coupled with driver.....	(X)	562,192	184,074	584,511	164,483
3339111444	1" discharge and under.....	36	171,084 a/	44,629	232,182	37,739
3339111445	Discharge more than 1", up to 2".....	39	323,457	83,060	268,052	70,957
3339111447	Over 2" discharge.....	38	67,651 a/	56,385	84,277	55,787
	Single and two stage, single suction, in-line, close coupled with driver.....	(X)	1,744,066	51,908	576,400	39,410
3339111449	2" discharge and under.....	11	(D)	(D)	(D)	(D)
333911144A	Over 2" discharge.....	12	(D)	(D)	(D)	(D)
	Single stage, single suction, vertical, in-line frame.....	(X)	368,375	59,230	263,575	63,559
333911144C	2" discharge and under.....	15	358,490	28,593	252,814	32,394
333911144D	Over 2" discharge.....	11	9,885 a/	30,637	10,761	31,165
	Single stage, single suction, frame or foot mounted, metallic pumps (built to National or International Standards ANSI B73.1 or ISO 2858) .....	(X)	67,118	160,858	76,312	191,187
333911144F	2" discharge and under.....	21	27,956	62,370	36,764	75,708
333911144G	Over 2" discharge.....	20	39,162	98,488	39,548	115,479
	Single stage, single suction, frame or foot mounted, nonmetallic pumps (built to National or International Standards ANSI B73.1 or ISO 2858) .....	(X)	40,953	23,158	44,230	23,851
333911144J	2" discharge and under.....	10	39,695	16,190	42,684	15,814
333911144K	Over 2" discharge.....	6 b/	1,258 a/	6,968	1,546	8,037
	Single stage, single suction, frame or foot mounted, non-ANSI, non-ISO, with or without recessed impeller.....	(X)	68,919	94,899	71,081	92,835
333911144M	1" discharge and under.....	19	14,869	4,740	15,945	5,776
333911144N	Discharge more than 1", up to 2".....	22 a/	23,207 a/	15,466	26,877	18,520
333911144R	Over 2" discharge.....	24 a/	30,843 b/	74,693	28,259	68,539
	Single stage, single suction, replaceable elastomer lined or hard metal, frame or foot mounted .....	(X)	7,057	66,054 r/	7,614	62,158
3339111451	1" discharge and under.....	5	(D)	(D)	387	1,440
3339111452	Discharge more than 1", up to 2".....	7	(D)	(D) r/	4,304	20,890
3339111454	Over 2" discharge.....	9 b/	2,768 b/	40,734	2,923	39,828
	Single stage, single suction, centerline mounted.....	(X)	28,356	86,838 r/	31,957	64,211
3339111456	2" discharge and under.....	8	24,774 a/	24,476 r/	29,235 r/	22,165
3339111457	Over 2" discharge.....	9 b/	3,582 b/	62,362	2,722	42,046
	Single stage, axially split, double suction.....	(X)	17,040	109,227	17,713	93,654
3339111459	4" discharge and under.....	11	4,383	10,001	4,787	9,394
333911145A	Discharge more than 4", up to 8".....	15	9,772 a/	52,318	10,155	50,465
333911145C	Over 8" discharge.....	14	2,885 a/	46,908	2,771	33,795
	Single stage, radially split, double suction impeller pumps, API-610 compliant.....	(X)	294	21,519	171	14,028
333911145E	4" discharge and under.....	4	25	1,561	14	761
333911145F	Discharge more than 4", up to 8".....	6	160	12,275	90	7,577

Continued

Table 2. Quantity and Value of Shipments of Selected Construction Machinery: 1998 and 1997  
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1998		1997	
			Quantity	Value	Quantity	Value
333911145H	Over 8" discharge.....	5	109	7,683	67	5,690
	Single stage, radially split, double suction					
	impeller pumps, non-API compliant.....	(X)	(D)	(D)	(D)	(D)
333911145K	4" discharge and under.....	4	(D)	(D)	(D)	(D)
333911145L	Discharge more than 4", up to 8".....	4	(D)	(D)	(D)	(D)
333911145N	Over 8" discharge.....	2	(D)	(D)	(D)	(D)
	Multistage, single or double suction, diffuser					
	design, radially split case.....	(X)	20,039	43,168	15,566	29,793
3339111461	4" discharge and under.....	13	19,783	a/ 28,412	15,413	19,064
3339111464	Discharge more than 4", up to 8".....	10	a/ 239	13,105	(D)	(D)
3339111467	Over 8" discharge.....	3	c/ 17	c/ 1,651	(D)	(D)
	Multistage, single or double suction, volute or					
	diffuser design, axially split case.....	(X)	1,883	76,443	2,684	70,242
333911146C	4" discharge and under.....	11	c/ 1,559	c/ 39,455	2,409	43,711
333911146E	Discharge more than 4", up to 8".....	6	c/ 310	c/ 34,721	263	25,947
333911146H	Over 8" discharge.....	4	14	2,267	12	584
	Sealless centrifugal pumps, magnetic drive.....	(X)	131,850	53,307	86,388	32,943
3339111471	1" discharge and under.....	12	125,226	26,758	82,322	16,282
3339111474	Discharge more than 1", up to 2".....	9	(D)	(D)	3,111	9,496
3339111477	Over 2" discharge.....	7	(D)	(D)	955	7,165
	Sealless centrifugal pumps, canned motor.....	(X)	(D)	(D)	(D)	(D)
333911147C	1" discharge and under.....	7	16,399	10,537	16,602	11,289
333911147E	Discharge more than 1", up to 2".....	3	(D)	(D)	(D)	(D)
333911147H	Over 2" discharge.....	3	(D)	(D)	(D)	(D)
	Propeller and mixed flow, horizontal and vertical					
	including vertical turbine over 36".....	(X)	3,826	81,480	3,697	71,062
3339111481	36" and under.....	14	a/ 2,267	b/ 45,453	2,098	40,450
3339111484	Over 36".....	13	c/ 1,559	c/ 36,027	1,599	30,612
	All other centrifugal pumps.....	(X)	2,989,116	236,098	2,402,391	202,056
333911148K	6" discharge and under.....	36	a/ 2,984,608	a/ 200,587	2,399,099	174,689
333911148M	Over 6" discharge.....	15	c/ 4,508	b/ 35,511	3,292	27,367
	Centrifugal pumps, n.e.c. ....	12	349,665	42,027	323,178	38,862
	Vertical turbine pumps not exceeding 36"					
	discharge, including deep-well:					
	Pump with submersible motor.....	(X)	31,246	67,568	27,024	62,091
3339111493	Bowl diameter 6" and under.....	19	17,413	a/ 31,115	17,213	27,075
3339111498	Bowl diameter over 6".....	17	13,833	a/ 36,453	9,811	35,016
333911149F	Pump and bowl assemblies through 36" (all					
	column and shaft lengths, including FM or UL					
	approved vertical turbine fire pumps; deep					
	well and short coupled pumps, except can					
	and pot type).....	14	21,389	a/ 103,634	29,614	124,595
333911149N	Can and pot type (pump and bowl assemblies,					
	suction can and pot type).....	9	b/ 1,902	a/ 36,062	1,975	33,752
	Vertical turbine pumps, n.s.k. ....	2	368	2,455	391	2,611
	Reciprocating pumps:					
33391114C3	Direct-acting steam-driven.....	1	(D)	(D)	(D)	(D)
33391114C7	Driven by electric motor, engine, or steam					
	turbine:					
	Reciprocating piston, plunger or					
	diaphragm (not air operated) pumps.....	37	a/ 579,076	224,151	575,156	216,306
33391114D5	Diaphragm pumps (air operated).....	21	1,877,154	222,730	1,691,417	217,310
	Rotary pumps:					
	100-PSI and under designed pressure.....	(X)	849,005	260,765	808,393	220,488
33391114R1	10 GPM and under, designed capacity.....	26	615,206	69,222	551,046	68,699
33391114R3	11 to 99 GPM, designed capacity.....	20	194,323	133,806	r/ 217,120	82,559
33391114R5	100 to 299 GPM, designed capacity.....	15	31,110	b/ 29,743	30,322	38,912
33391114R7	300 GPM and over, designed capacity.....	10	8,366	b/ 27,994	9,905	30,318
	101 to 249 PSI, designed pressure.....	(X)	192,431	79,607	201,780	80,482
33391114RA	10 GPM and under, designed capacity.....	11	151,599	29,344	149,471	26,150
33391114RC	11 to 99 GPM, designed capacity.....	11	26,842	25,848	35,918	26,990
33391114RE	100 GPM, and over, designed capacity.....	8	13,990	24,415	16,391	27,342
	250 to 500 PSI, designed pressure:					
33391114RJ	10 GPM and under, designed capacity.....	8	80,255	9,289	r/ 87,456	9,713
33391114RM	11 GPM, and over, designed capacity.....	9	5,311	8,074	r/ 5,699	8,918
33391114RR	Over 500 PSI, designed pressure.....	6	(D)	(D)	(D)	(D)
33391114T5	Other industrial pumps, n.e.c. ....	25	1,083,483	a/ 146,745	1,081,144	140,663
	Industrial pumps, n.s.k. 3/.....	67	70,101	23,367	(D)	(D)
	Domestic water systems, including drivers.....	(X)	2,337,603	408,882	2,063,189	357,162
3339111167	Nonsubmersible pump systems (jet and nonjet,					
	including drivers).....	16	1,078,724	160,400	1,034,794	157,067
	Submersible pump systems, 5 hp and under,					
	including drivers.....	(X)	1,232,391	244,789	1,021,048	198,144
3339111172	Up to 1 hp.....	18	914,742	173,307	799,122	147,488

Table 2. Quantity and Value of Shipments of Selected Construction Machinery: 1998 and 1997  
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1998		1997	
			Quantity	Value	Quantity	Value
3339111175	Over 1 hp to 3 hp.....	14	223,638	a/ 54,155	136,640	34,746
3339111178	Over 3 hp to 5 hp.....	13 c/	94,011	a/ 17,327	85,286	15,910
3339111190	Domestic hand and windmill pumps, pump jacks, and cylinders (sold separately, including drivers).....	3 b/	21,868	c/ 2,923	(D)	1,278
	Domestic water systems and related pumps, n.s.k. ....	3	4,620	770	(D)	673
3339111 pt.	Domestic sump pumps, 1 hp and under, including drivers.....	(X)	2,601,680	145,784	2,741,110	r/ 161,202
3339111235	Pedestal, including drivers.....	16	270,491	14,132	301,972	16,882
	Submersible, including drivers .....	(X)	2,324,138	131,257	2,439,138	r/ 143,881
3339111238	1/3 hp and under.....	17 a/	2,117,016	112,778	2,258,267	r/ 129,676
3339111239	Over 1/3 hp.....	9 b/	207,122	18,479	180,871	14,205
	Domestic sump pumps, n.s.k. 3/.....	5	7,051	395	(S)	439
3339111330	Oil well and oil field pumps (except boiler feed).....	(X)	58,443	362,068	59,369	332,669
3339111335	Value of drivers 2/.....	9	(X)	110,681	(X)	115,822
3339111341	Subsurface pumps for oil well pumping.....	10 c/	45,786	b/ 150,957	48,227	156,297
3339111352	Mud pumps (slush pumps).....	4 c/	650	72,753	r/ 561	31,880
3339111363	Other oil well and oil field pumps 4/.....	9 b/	11,486	a/ 24,422	r/ 10,581	25,684
	Oil well and oil field pumps, n.s.k. 3/.....	6	521	3,255	(S)	2,986
	Other pumps, n.e.c., including drivers.....	(X)	5,714,026	253,665	6,360,537	304,413
	Other pumps (except vacuum pumps, automotive pumps, measuring and dispensing or service station pumps, hand pumps, and hydraulic fluid power pumps), including oil burner and appliance pumps, fire engine pumps, laboratory pumps, packaged pump units, hot water heating circulator pumps, etc.:					
3339111580	Reported (or estimated from prior year reports).....	23	5,691,932	a/ 252,617	6,334,935	303,155
	Estimated from other sources 3/.....	10	22,094	1,048	(S)	1,258
	Parts and attachments for pumps and pumping equipment whose product codes begin with 333911; made by manufacturers of complete units only.....	(X)	(X)	1,097,375	(X)	1,002,538
3339115144	Aftermarket (spare) parts for centrifugal pumps.....	47	(X)	b/ 709,690	(X)	695,565
3339115155	Aftermarket (spare) parts for vertical turbine pumps.....	11	(X)	167,050	(X)	54,942
3339115166	Aftermarket (spare) parts for reciprocating pumps.....	21	(X)	96,609	(X)	r/ 95,100
3339115199	Other.....	25	(X)	a/ 124,026	(X)	156,931
3339121 pt.	Air and gas compressors.....	(X)	3,395,226	2,522,060	r/ 3,182,025	r/ 2,634,859
3339121115	Value of drivers 2/.....	28	(X)	a/ 252,885	(X)	r/ 277,656
	Air compressors, new:					
	Stationary, reciprocating, single acting.....	(X)	617,690	304,810	r/ 740,784	r/ 317,272
3339121121	1-1/2 hp and under.....	16	233,934	a/ 43,399	r/ 337,988	r/ 58,348
3339121124	Over 1-1/2 hp to 5 hp.....	20	156,666	100,270	253,490	131,268
3339121127	6 hp to 25 hp.....	20	226,343	144,345	r/ 147,959	r/ 110,980
333912112A	26 hp and over.....	9 a/	747	b/ 16,796	1,347	16,676
3339121133	Stationary, reciprocating, double acting.....	12	17,648	a/ 40,964	r/ 27,764	43,575
	Stationary, rotary positive:					
3339121144	Discharge pressure 50 PSIG and under, all hp sizes.....	9	84,547	32,679	r/ 93,625	r/ 43,835
	Discharge pressure of 51 PSIG and over.....	(X)	18,746	313,289	r/ 30,984	r/ 387,398
3339121151	40 hp and under.....	10 b/	11,007	b/ 99,795	r/ 12,035	r/ 107,264
3339121154	41-150 hp.....	12	5,947	117,383	12,663	r/ 172,297
3339121157	151-300 hp.....	8	1,402	62,145	5,731	r/ 64,023
333912115A	301 hp and over.....	4	390	33,966	555	43,814
3339121166	Stationary, centrifugal and axial.....	8	25,071	242,470	r/ 25,719	276,720
	Portable.....	(X)	2,515,560	631,392	2,201,181	584,611
3339121171	Under 11 CFM.....	11	(D)	(D)	(D)	(D)
3339121174	11 to 74 CFM.....	10	(D)	(D)	(D)	(D)
3339121177	75 to 124 CFM.....	7 c/	1,318	c/ 7,408	707	4,015
333912117A	125 to 249 CFM.....	9 c/	12,384	c/ 98,981	12,710	r/ 101,037
333912117E	250 to 599 CFM.....	6 c/	2,461	c/ 32,529	2,513	r/ 32,637
333912117H	600 CFM. and over.....	7 c/	2,156	c/ 88,281	2,209	r/ 89,255
	Gas compressors, new:					
	Stationary, centrifugal and axial.....	(X)	503	348,067	523	309,736
3339121183	Natural gas.....	5	135	139,913	74	119,060
3339121188	All other gases.....	7	368	208,154	449	190,676
	Stationary reciprocating:					
3339121199	Integral engine, including drivers.....	5	(D)	(D)	230	40,897
	Other than integral engine:					

Table 2. Quantity and Value of Shipments of Selected Construction Machinery: 1998 and 1997  
[Quantity in number of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	1998		1997	
			Quantity	Value	Quantity	Value
33391211A1	1,000 hp and under.....	14	1,461 a/	95,228	1,475	145,559
33391211A9	1,001 hp and over.....	7	(D)	(D)	1,043	260,140
33391211CC	Stationary rotary positive.....	5	659	49,576	889 r/	46,720
33391211FF	Other compressors (except for refrigeration, air-conditioning, and ice-making), including rebuilt compressors, compressor packages, and packaged compressor units assembled from purchased compressors.....	14	c/	49,593	108,656 r/	57,808
	Air and gas compressors, n.s.k. 3/.....	16		46,730	(D)	129,719
						48,677
3391110123	Laboratory vacuum pumps.....	(X)	(D)	(D)	(D)	(D)
	Laboratory vacuum pumps, including drivers and replacement parts.....	4	(D)	(D)	(D)	(D)
3339121 pt.	Vacuum pumps, excluding laboratory.....	(X)	343,484	229,704 r/	305,943	273,567
3339121225	Value of drivers 2/.....	14	(X)	22,163	(X) r/	30,162
	Low vacuum, 29.5" mercury vacuum and lower:					
3339121261	Under 5 hp.....	17	254,970	61,129	239,292 r/	64,426
3339121265	5 hp and over.....	13	b/	41,350	5,115	40,405
	High vacuum, 29.6" mercury vacuum and over:					
3339121273	Under 5 hp.....	14	c/	60,863	61,088 r/	58,698
3339121277	5 hp and over.....	6	b/	2,627 b/	30,317	2,838
	Vacuum pumps, n.s.k. 3/.....	16		13,657	(D)	16,318
	Parts and attachments for air and gas compressors and vacuum pumps whose product codes begin with 333912; made by manufacturers of complete units only.....	(X)	(X)	333,306	(X)	361,322
3339125111	Parts and attachments for air and gas compressors and vacuum pumps.....	39	(X)	333,306	(X)	361,322

D Withheld to avoid disclosing data of individual companies. n.e.c. Not elsewhere classified. n.s.k Not specified by kind. pt. Part.  
r/Revised by 5 percent or more from previously published data. S Does not meet publication standards. X Not applicable.

1/Value includes parts but quantity does not.

2/Value of drivers (electric motors, internal combustion engines, hydrostatic transmissions, steam turbines, etc.) is not included for most product categories but rather placed in one of four separate "driver" categories within the product class. Drivers may be included in values for products in product classes without separate driver categories.

3/Not specified by kind, or "n.s.k.": Values and quantities for a number of manufacturing establishments (either delinquent or too small to be included in the survey) were estimated from other surveys and records. Estimates were made only to the product class level. Drivers may be included in some cases.

4/Power pumps for water flooding are reported in product code 3339111363.

Note: The percent of estimation of each item is indicated as follows: a/16 to 25 percent of this item is estimated. b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Table 3. Shipments, Exports, and Imports of Pumps and Compressors: 1998 and 1997  
[Quantity in number of units. Value in thousands of dollars]

Product description	Manufacturers' shipments 1/		Export shipments 2/		Import shipments 4/	
	Quantity	Value f.o.b. plant	Quantity	Value 3/	Quantity	Value 5/
1998						
Pumps 6/.....	22,643,560	4,094,717	1,977,702	911,730	30,583,320	591,071
Centrifugal pumps, submersible.....	703,204	252,851	256,380	61,867	781,827	35,062
Centrifugal pumps, other 7/.....	6,429,739	1,464,239	141,873	305,934	10,490,822	220,158
Turbine pumps, vertical.....	54,905	209,719	8,603	30,653	82,624	4,310
Reciprocating pumps.....	(D)	(D)	86,787	86,034	646,734	55,830
Diaphragm pumps.....	1,877,154	222,730	161,637	43,165	1,019,134	25,663
Rotary pumps.....	(D)	(D)	60,399	110,259	6,873,392	45,775
Oil well and oil field pumps (except boiler feed).....	58,443	362,068	6,191	57,964	7,816	17,857
Domestic water systems, including windmill and hand pumps.....	2,337,603	408,882	417,633	25,227	29,986	30,095
Other pumps, including sump pumps, and hot water circulator pumps, etc. ....	9,399,189	546,194	838,199	190,627	10,650,985	156,321
Compressors 6/.....	3,332,608	2,475,330	1,905,853	183,405	914,161	258,306
Stationary air compressors:						
Reciprocating, single and double acting 8/.....	635,338	345,774	(NA)	(NA)	393,407	95,044
Rotary positive, centrifugal, and axial 8/.....	128,364	588,438	(NA)	(NA)	357,124	10,935
Portable air compressors 8/.....	2,515,560	631,392	4,433	63,318	3,792,622	101,754
Other air and gas compressors, including gas compressors, and compressor packages.....	53,346	909,726	1,901,420	120,087	4,599,008	50,573
Vacuum pumps.....	(D)	(D)	411,735	105,504	2,227,654	278,270
1997						
Pumps 6/.....	20,995,595	4,889,707	2,366,601	992,187	46,778,165	562,149
Centrifugal pumps, submersible.....	717,029	262,454	287,150	74,143	561,654	29,279
Centrifugal pumps, other 7/.....	4,519,950	1,300,721	159,761	316,085	9,008,684	205,800
Turbine pumps, vertical.....	59,004	223,049	6,126	23,686	19,702	4,987
Reciprocating pumps.....	(D)	(D)	93,411	103,508	448,932	53,775
Diaphragm pumps.....	1,691,417	217,310	191,029	51,984	894,792	22,444
Rotary pumps.....	(D)	(D)	84,470	133,595	1,539,105	40,108
Oil well and oil field pumps (except boiler feed).....	59,369	332,669	7,048	66,456	59,629	11,458
Domestic water systems, including windmill and hand pumps.....	2,063,189	357,162	395,511	29,569	19,902,006	24,834
Other pumps, including sump pumps, and hot water circulator pumps, etc. ....	10,157,189	605,839	1,142,095	193,161	14,343,661	169,464
Compressors 6/.....	3,182,025	2,599,805	1,740,575	192,326	8,843,270	354,414
Stationary air compressors:						
Reciprocating, single and double acting 8/.....	768,548	360,847	(NA)	(NA)	545,505	99,179
Rotary positive, centrifugal, and axial 8/.....	150,328	707,953	(NA)	(NA)	388,073	123,574
Portable air compressors 8/.....	2,201,181	598,234	6,362	97,917	3,466,328	78,268
Other air and gas compressors, including gas compressors, and compressor packages.....	61,968	932,771	1,734,213	94,409	4,443,364	53,393
Vacuum pumps.....	(D)	(D)	379,847	116,936	2,718,399	328,417

D Withheld to avoid disclosing data for individual companies. NA Not applicable.

1/Manufacturers' shipments generally exclude value of drivers, see Table 4.

2/Source: Census Bureau report EM 545, U.S. Exports.

3/Excludes the value of drivers.

4/Sources: Census Bureau report IM 145, U.S. General Imports, and IM 146, U.S. Imports for Consumption.

5/Value represents the c.i.f. (cost, insurance, and freight) value at the first port of entry in the United States plus import duties.

6/Manufacturers' shipments detail does not necessarily sum to total because of such factors as drivers, parts, and "n.s.k.";

see Table 1.

7/Manufacturers' shipments include n.s.k. (see Table 1) which is believed not to include submersible pumps.

8/Export data for three categories of compressors are combined because one harmonized code in the third category may be used interchangeably with any of several codes in the first two categories.

**Table 4. Comparison of North American Industry Classification-Based Product Codes with Schedule B Export Numbers and HTSUSA Import Numbers: 1998**

Product code	Product description	Export number 1/	Import number 2/
3339111424, 425, 428, 429, 42C, 42E, 42G, 42K, 42M	Centrifugal pumps, submersible .....	8413.70.2004	8413.70.2004
3339111411, 412, 444, 445, 447, 449, 44A, 44C, 44D, 44F, 44G, 44J, 44K, 44M, 44N, 44R, 451, 452, 454, 456, 457, 459, 45A, 45C, 45E, 45F, 45H, 45K, 45L, 45N, 461, 464, 467, 46C, 46E, 46H, 471, 474, 477, 47C, 47E, 47H, 481, 484, 48K, 48M	Centrifugal pumps, other.....	8413.70.1000	8413.70.1000
		8413.70.2005	8413.70.2005
		8413.70.2015	8413.70.2015
		8413.70.2022	8413.70.2022
		8413.70.2025	8413.70.2025
		8413.70.2030	8413.70.2030
		8413.70.2040	8413.70.2040
		8413.70.2090	8413.70.2090
3339111493, 498, 49F, 49N	Turbine pumps, vertical.....	8413.81.0020	8413.81.0020
33391114C3, 4C7	Reciprocating pumps.....	8413.50.0090	8413.50.0090
33391114D5	Diaphragm pumps.....	8413.50.0050	8413.50.0050
33391114R1, 4R3, 4R5, 4R7, 4RA, 4RC, 4RE, 4RJ, 4RM, 4RR	Rotary pumps.....	8413.60.0070	8413.60.0070
		8413.60.0090	8413.60.0090
3339111335, 341, 352, 363	Oil well and oilfield pumps (except boiler feed).....	8413.50.0010	8413.50.0010
		8413.60.0050	8413.60.0050
3339111167, 172, 175, 178, 190	Domestic water systems, including windmill and hand pumps .....	8413.20.0000	8413.20.0000
		8413.81.0030	8413.81.0030
33391114T5, 235, 238, 239, 580	Other pumps.....	8413.81.0040	8413.81.0040
3339121121, 124, 127, 12A, 133	Stationary air compressors -- reciprocating, single and double acting.....	8414.80.1018	8414.80.1505
		8414.80.1042	8414.80.1515
		8414.80.1055	8414.80.1525
			8414.80.1535
			8414.80.1540
3339121144, 151, 154, 157, 15A, 166	Stationary air compressors -- rotary positive, centrifugal, and axial.....		8414.80.1545
			8414.80.1555
		8414.80.1060	8414.80.1560
		8414.80.1067	8414.80.1565
		8414.80.1075	8414.80.1570
3339121171, 174, 177, 17A, 17E, 17H	Portable air compressors.....	8414.80.1080	8414.80.1575
			8414.80.1580
		8414.40.0000	8414.40.0000
		8414.80.1095	8414.80.1585
3339121183, 188, 199, 1A1, 1A9, 1CC, 1FF	Other compressors.....		8414.80.1590
		8414.80.2010	8414.80.2010
		8414.80.2050	8414.80.2050
		8414.80.2060	8414.80.2060
		8414.80.2070	8414.80.2070
3391110123, 3339121225, 261, 265, 273, 277	Vacuum pumps.....	8414.80.9000	8414.80.9000
		8414.10.0000	8414.10.0000

1/Source: 1998 edition, Harmonized System-Based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, Annotated (1998).